Case Report

Eversion of the Bovine Bladder

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Review of the literature

Several educational books deal with the subject of displacement of the bladder in livestock (Moller-Sorensen 1954, Berge and Westhues 1961, Rosenberger 1978, N. O. Rasbecj 1983, etc.)

Most often, prolapse of the bladder (prolapsus vesicae) is observed by rupture of the wall of the vagina in connection with difficult parturition. Due to a short and wide urethra, eversion of the bladder is especially common in the mare, and almost solely related to parturition, characterised by strong contractions. In spite of a longer and more narrow urethra, eversion of the bladder does occur in cows from time to time, but these cases are also solely related to parturition. This fact is obviously caused by contractions related to birth, but also by walls of the urethra relaxing in this period. Paresis of the bladder may also result in a case of eversion.

When everting, the bladder turns inside out and is forced out through the urethra - to be found in the vagina or outside labiae in the form of a prolapse the size of a child's head. Soon after the eversion, changes in the mucosa of the bladder occur, as it turns bluish, thickens, and feels oedematous. At this stage, it is not immediately obvious that the prolapsed part is the bladder, and the diagnosis must be established at a thorough examination. The base of the prolapse, in a case of an everted bladder, can be found in the entrance of or inside the urethra.

From a point of differential diagnosis, the following must be considered: Prolapsed bladder without inversion, vaginal polyps, vaginal prolapse, vaginal tumours, and the fetal membrane bladder.

Treatment

It is generally agreed that an attempt to reset the bladder should be made. Several colleagues confirm this to be possible in acute cases: E. Jensen, DVM, Ansager Veterinary Hospital, referred to a case of a cow having been taken into the clinic for a caesarean section and, in the same examination for a prolapse from the vulva. It turned out to be a case of eversion of the bladder, where the everted part was filled with intestines. When performing the caesarean operation, the intestines and the bladder were replaced.

(Dansk Veterinaertidsskrift, 15/7, 1988, 71, 14)

In neglected cases, where the mucous membrane has become oedematous and changes have occurred, an immediate replacement of the bladder is often not possible.

In the above mentioned literature, it is stated that astringent baths may be used. If the mucosa of the bladder is thus regarded as no longer effective, an amputation may have to be performed. In Rasbech's article from 1983, a firm and through-running ligature, placed distal to the entrance of the ureters, is suggested.

The area distal to the ligature is intersected and the stump is reset through the urinary tract. Urinary flow normally occurs following the amputation.

In "Krankenheiten des Rindes" from 1978, Rosenberger suggest that the resetting may be facilitated by cuts in the urethra.

However, regardless of the therapy used, a strong antiseptic treatment is necessary if a cystitis is to be avoided.

A neglected case of eversion of the bladder in a cow.

Anamnesis

A Holstein-Friesian, 6 years old, 4th calver, and unable to get up. "Something strange" is reported to come from the vagina. The cow did not eat. The owner waited for 24 hours before calling the veterinarian, having realized that the cow was unable to get up by herself. The eversion of the bladder had been present during this period. No treatment had been installed.

Diagnosis

At the examination, the cow showed a temperature of 39.5°C. and suffered from paralysis, eversion of the bladder, and a prolapse. The base of the prolapse was located a few cms into the urethra. The corpus of the prolapse was at the time 15-18 cm in diameter. The mucous membrane of the bladder was oedematous and a dark red. The test-puncture of the eversion lumen presented a serous, yellowish liquid, and it was estimated that there was no other content. The everted bladder was undamaged.

Therapy

A replacement was tried, but due to the swollen and oedematous mucosa, attempts to manoeuver the bladder back failed. Slaughter was considered, but the idea rejected due to the temperature and the probable diagnosis of

milk fever. Then it was decided to increase the lumen in the urethra by splitting the tissue between urethra and vagina. For this purpose, a curved scalping blade cutting inside the bend (paragon no.12) was chosen. Fastened to a handle, the scalping blade was inserted parallel to the forefinger into the urethra dorsally to the everted stem of the bladder. The tissue between urethra and the vagina was divided from a site 5-7 cm into the urethra and back to the orifice. Then the cleaned bladder was reset. Sufficient space had now been established to insert a hand into the reset bladder in order to make sure that the everted part had been fully straightened. It was not possible to fully straighten the apex.

The divided tissue between urethra and the vagina was sutured with a deep, continuous catgut. A finger was placed in the urethra to make sure that a sufficient opening was kept.

The cow was treated with calcium borogluconate and oxytetracycline i.v., and with carbacoline injection i.m. She was able to get up immediately after treatment, and started to eat. For the next two days, post-treatment with oxytetracycline i.v. was installed. In the days after the operation, a discharge from the vagina was observed. It was, however, impossible to prove that it came from the bladder. On day 3 after treatment, the temperature was back to normal.

Discussion

The cow was attended to several times, but has shown no signs of crisis ever since. Two weeks after the operation, the cow was examined more closely. It was urinating normally, and a rectal examination proved a normally contracted bladder. The opening to the urethra was satisfactory, and the catgut sutures still undamaged.

The above mentioned case obviously cannot guarantee that the procedure and treatment described will wotk in all cases, but is certainly worth trying in situations where any other way of resetting the bladder is impossible. Most importantly, the mucosa of the prolabled bladder must be subject to a close evaluation in regard to its ability to regain its normal functions.

References

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